



3M™ EPE Films

# Effective. Durable. Consistent.

3M™ EPE Films consist of ethylene vinyl acetate (EVA) bonded to both sides of a polyester film. These multi-layer films can be used in crystalline silicon and thin-film solar modules. They are easy to incorporate into the laminated stack of materials in PV modules, and can be used with common production equipment and lamination cycles.

- ▶ Compatible with conventional encapsulants, providing strong, durable bonds
- ▶ Excellent adhesion to metals, bus wires, and cell materials
- ▶ Variety of constructions available to meet the needs of dielectric and cosmetic applications
- ▶ Additional UV resistance provided by 3M™ EPE Film D300 to enable the use of UV-through front encapsulants

## Performance of 3M™ EPE Films

Product	Unit	Test Method	0131	9131	8131	0161	9161	D300
Color			clear	white	black	clear	white	white
EVA Thickness	µm		30	30	30	60	60	100
PET Thickness	µm		100	100	100	100	100	100
Total Thickness	µm		160	160	160	220	220	300
Breakdown Voltage	kV	ASTM D149	14	14	14	15	15	17
Max Tensile Load - MD (TD)	N/0.5inch	ASTM D882	240 (260)					
Elongation at Break - MD (TD)	%	ASTM D882	130 (110)					
Shrinkage - MD (TD)	%	15 min & 150°C	<2 (<1)					
Interlayer Adhesion (EVA/PET) After Lamination	N/cm	3M Method	10	10	10	10	10	10
Adhesion to EVA Encapsulant	N/cm	ASTM D903	Film substrate break					
Bare Film UV Resistance (32 kWh/m <sup>2</sup> , UVA)	YI	ASTM G154	N/A	N/A	N/A	N/A	N/A	<5

## Renewable Energy Division

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## Applications

**Cosmetic masking:**  
3M EPE Films can serve as a cosmetic mask help provide uniform and appealing module appearance. They can be used to cover bus bars and other electrical connections in PV modules.



Without cosmetic masking



With 3M™ EPE Film

## Dielectric insulation:

3M EPE Films help provide electrical insulation between components of a solar module. Applications include bus bars, junction box lead wires and other electrical connections within a solar module.



3M™ EPE Film used as dielectric insulation near the junction box